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Counter track joint

Claims

1. A constant velocity universal ball joint consisting of an outer joint part (11) with outer ball tracks (15),

an inner joint part (12) with inner ball tracks (16),

torque transmitting balls (13) guided in pairs of tracks formed of one outer ball track (15) and one inner ball track (16),

an annular ball cage (17) held between the outer joint part (11) and the inner joint part (12) and having circumferentially distributed cage windows (18) each receiving one of the balls (13),

the ball cage (17) forms an inner face (23) which is internally widened between two end apertures (21, 22) of the ball cage,

the inner joint part (12) comprises a greatest outer diameter d2 which is greater than each of the inner diameters d1 of the end apertures (21, 22) of the ball cage,

adjoining inner ball tracks (16) of the inner joint part (12) form webs (27) whose axial length x is greater than the circumferential extension y of the cage windows (18) of the ball cage (17),

the ball cage (17) can be elastically ovalised to the extent that, when the axes of the ball cage (17) and of the

inner joint part (12) intersect one another approximately perpendicularly upon contact between a web (27_1) of the inner joint part (12) and the inner face (23) of the ball cage (17), the opposed web (27_2) of the inner joint part (12) is able to pass through an end aperture (21, 22).

2. A joint according to claim 1,

characterised in

that the ball cage (17) can be elastically ovalised to the extent that, when the axes of the ball cage (17) and of the inner joint part (12) intersect one another approximately perpendicularly, the inner joint part (12) is able, via the smallest side projection with a diameter d5, to pass through an end aperture (21, 22) of the ball cage.

3. A joint according to claim 1,

characterised in

that the ball cage (17) can be elastically ovalised to such an extent that, when the axes of the ball cage (17) and of the inner joint part (12) intersect one another approximately perpendicularly, the inner joint part (12) is able, via the greatest diameter d1, to pass through the end aperture (21, 22) of the ball cage.

4. A joint according to any one of claims 1 to 3,

characterised in

that a longitudinally extending deepened groove (29) has been worked into the track base of at least one inner ball track (16) of the inner joint part (12).

5. A joint according to any one of claims 1 to 4,

characterised in

that a centrally circumferentially extending deepened groove (24) has been worked into the inner face (23) of the ball cage (17).

6. A joint according to any one of claims 1 to 5,

characterised in

that, at least in a widened end portion (19, 20) of an inner ball track (16) of the inner joint part, there has been worked in a notch which extends centrally relative to the longitudinal extension of the track.

7. A joint according to any one of claims 1 to 6,

characterised in

that the joint is designed as a counter track joint wherein pairs of tracks of first outer ball tracks (15_1) and of first inner ball tracks (16_1) open in a first axial direction, i. e. distance themselves from one another, and wherein pairs of tracks of second outer ball track (15_2) and of second inner ball tracks (16_2) open in the second axial direction, i. e. distance themselves from one another.

8. A joint according to any one of claims 1 to 7,

characterised in

that the joint is designed as a fixed joint, wherein inner annular faces of the inner face (23) of the ball cage (17) are in centring contact with outer faces (28) of the inner joint part (12).